We claim:

1. A catheter balloon comprising a porous material and elastomeric material, the porous material being sealed to render it liquid-tight, wherein the catheter balloon has a burst pressure of at least about 5 atmospheres.

2. A catheter balloon according to claim 1 wherein the catheter balloon has a burst pressure of at least about 8 atmospheres.

3. A catheter balloon according to claim 1 wherein the catheter balloon has a burst pressure of at least about 10 atmospheres.

4. A catheter balloon according to claim 1 wherein the catheter balloon has a burst pressure of at least about 15 atmospheres.

5. A catheter balloon according to claim 1 wherein the porous material is polytetrafluoroethylene.

6. A catheter balloon according to claim 1 wherein the catheter balloon is configured for stent delivery.

7. A catheter balloon according to claim 1 wherein the catheter balloon is configured for graft delivery.

8. A catheter balloon according to claim 1 wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction ratio of at least about 0.5.

9. A catheter balloon according to claim 1 wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction ratio of at least about 0.6.

10. A catheter balloon according to claim 1 wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction efficiency ratio of at least about 0.3.

11. A catheter balloon according to claim 1 wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction efficiency ratio of at least about 0.7.

12. A catheter balloon according to claim 1 wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction efficiency ratio of at least about 0.9.

13. A catheter balloon according to claim 1 wherein the porous material comprises helically wrapped film.

14. A catheter balloon according to claim 1 wherein the elastomeric material is impregnated into of at least a portion of void spaces in the porous material.

15. A catheter balloon comprising a porous material and elastomeric material, the porous material being sealed to render it liquid-tight, wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction efficiency ratio of at least about 0.3.

16. A catheter balloon according to claim 15 wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction efficiency ratio of at least about 0.7.

17. A catheter balloon according to claim 15 wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction efficiency ratio of at least about 0.9.

18. A catheter balloon according to claim 15 wherein the catheter balloon has opposing ends affixed to a catheter, said balloon having a length measured between said opposing ends, and wherein the length varies less than about ten percent between when the balloon is in a deflated state and when the balloon is inflated to a pressure of 8 atmospheres.

19. A catheter balloon according to claim 15 wherein the porous material is polytetrafluoroethylene.

20. A catheter balloon according to claim 15 wherein the catheter balloon has a burst pressure of at least about 10 atmospheres.

21. A catheter balloon according to claim 15 wherein the catheter balloon has a burst pressure of at least about 15 atmospheres.

22. A catheter balloon according to claim 15 wherein the catheter balloon is configured for stent delivery.

23. A catheter balloon according to claim 15 wherein the catheter balloon is configured for graft delivery.

24. A catheter balloon according to claim 15 wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction ratio of at least about 0.5.

25. A catheter balloon comprising a porous material and elastomeric material, the porous material being sealed to render it liquid-tight, wherein the balloon maintains a substantially circular cross section during inflation and deflation in the absence of external constraint.

26. A catheter balloon according to claim 25 wherein the catheter balloon has opposing ends affixed to a catheter, said balloon having a length measured between said opposing ends, and wherein the length varies less than about ten percent between when the balloon is in a deflated state and when the balloon is inflated to a pressure of 8 atmospheres.

27. A catheter balloon according to claim 26 wherein the porous material is polytetrafluoroethylene.

28. A catheter balloon according to claim 25 wherein the catheter balloon has a burst pressure of at least about 5 atmospheres.

29. A catheter balloon according to claim 25 wherein the catheter balloon has a burst pressure of at least about 8 atmospheres.

30. A catheter balloon according to claim 25 wherein the catheter balloon has a burst pressure of at least about 10 atmospheres.

31. A catheter balloon according to claim 25 wherein the catheter balloon has a burst pressure of at least about 15 atmospheres.

32. A catheter balloon according to claim 25 wherein the catheter balloon is configured for stent delivery.

33. A catheter balloon according to claim 25 wherein the catheter balloon is configured for graft delivery.

34. A catheter balloon according to claim 25 wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction ratio of at least about 0.5.

35. A catheter balloon according to claim 25 wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction ratio of at least about 0.6.

36. A catheter balloon according to claim 25 wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction efficiency ratio of at least about 0.3.

37. A catheter balloon according to claim 25 wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction efficiency ratio of at least about 0.7.

38. A catheter balloon according to claim 25 wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction efficiency ratio of at least about 0.9.

39. A catheter balloon comprising a porous material and elastomeric material, the porous material being sealed to render it liquid-tight, wherein the catheter balloon has opposing ends affixed to a catheter, said balloon having a length measured between said

opposing ends, and wherein the length varies less than about ten percent between when the balloon is in a deflated state and when the balloon is inflated to a pressure of 8 atmospheres.

40. A catheter balloon according to claim 39 wherein the porous material is polytetrafluoroethylene.

41. A catheter balloon according to claim 39 wherein the catheter balloon has a burst pressure of at least about 10 atmospheres.

42. A catheter balloon according to claim 39 wherein the catheter balloon has a burst pressure of at least about 15 atmospheres.

43. A catheter balloon according to claim 39 wherein the catheter balloon is configured for stent delivery.

44. A catheter balloon according to claim 39 wherein the catheter balloon is configured for graft delivery.

45. A catheter balloon according to claim 39 wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction ratio of at least about 0.5.

46. A catheter balloon according to claim 39 wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction efficiency ratio of at least about 0.3.

47. A catheter balloon comprising a porous material and elastomeric material, the porous material being sealed to render it liquid-tight, wherein the porous material is polytetrafluoroethylene.

48. A catheter balloon according to claim 47 wherein the catheter balloon has a burst pressure of at least about 5 atmospheres.

49. A catheter balloon according to claim 47 wherein the catheter balloon has a burst pressure of at least about 8 atmospheres.

50. A catheter balloon according to claim 47 wherein the catheter balloon has a burst pressure of at least about 10 atmospheres.

51. A catheter balloon according to claim 47 wherein the catheter balloon has a burst pressure of at least about 15 atmospheres.

52. A catheter balloon according to claim 47 wherein the catheter balloon is configured for stent delivery.

53. A catheter balloon according to claim 47 wherein the catheter balloon is configured for graft delivery.

54. A catheter balloon according to claim 47 wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction ratio of at least about 0.5.

55. A catheter balloon according to claim 47 wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction efficiency ratio of at least about 0.3.

56. A catheter balloon comprising a porous material and elastomeric material, the porous material being sealed to render it liquid-tight, wherein the catheter balloon is configured for stent delivery.

57. A catheter balloon according to claim 56 wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction ratio of at least about 0.5.

58. A catheter balloon according to claim 56 wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction efficiency ratio of at least about 0.3.

59. A catheter balloon comprising a porous material and elastomeric material, the porous material being sealed to render it liquid-tight, wherein the catheter balloon is configured for graft delivery.

60. A catheter balloon according to claim 59 wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction ratio of at least about 0.5.

61. A catheter balloon according to claim 59 wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction efficiency ratio of at least about 0.3.

62. A catheter balloon comprising a porous material and elastomeric material, the porous material being sealed to render it liquid-tight, wherein the catheter balloon following inflation to 8 atmospheres and subsequent deflation has a compaction ratio of at least about 0.5.

63. A catheter balloon comprising a balloon cover tubularly covering a balloon wherein the balloon cover comprises a porous material.

64. A catheter balloon according to claim 63 wherein the porous material comprises an elastomeric material.

65. A catheter balloon according to claim 63 wherein the balloon comprises a non-porous, elastic material.

66. A catheter balloon according to claim 63 wherein the balloon comprises a non-porous, inelastic material.

67. A catheter balloon comprising a porous material and an inelastic material, wherein the porous material includes void spaces being sealed with the inelastic material to render the balloon liquid-tight.

68. A catheter balloon comprising a porous material and an inelastic material, wherein the balloon during inflation exhibits a larger diameter at a first portion of its length than at a second portion of its length.

69. A method of making a balloon catheter, comprising:

a. providing a length of tubular catheter shaft having an inflation lumen connecting to an inflation port;

b. helically wrapping a length of porous polytetrafluoroethylene film about a first mandrel and removing the first mandrel, thereby creating a film tube having two opposing ends;

c. substantially sealing void spaces in the porous polytetrafluoroethylene film of the film tube with an elastomeric material; and

d. affixing the two opposing ends of the film tube to the tubular catheter shaft such that the inflation port is located between the two ends of the film tube, thereby creating an inflatable balloon from the film tube;

wherein after removing the film tube from the mandrel it is fitted over a second mandrel of smaller diameter than the first mandrel and tension is applied to the film tube in a longitudinal direction to cause it to conform to the second mandrel, after which the film tube and second mandrel are heated and allowed to cool, after which the film tube is compressed longitudinally, and then removed from the second mandrel.